

Applicants: Stan Gronthos and Andrew Zannettino
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Listing of Claims:

1-171. (Cancelled)

172. (Currently amended) A method of inducing formation or repair of blood vessels in a first tissue in need of blood vessel formation or blood vessel repair, comprising contacting the first tissue with a population of cells enriched for mesenchymal precursor cells (MPCs) that express the marker STRO-1 or cultured or expanded cells derived therefrom ~~population of cultured or expanded cells enriched for cells that express the marker STRO-1~~, so as to thereby generate new blood vessels or to repair existing blood vessels in the first tissue.

173-174. (Cancelled)

175. (Currently amended) The method of claim 172 wherein the population of cells ~~that express the marker STRO-1~~ comprise comprises at least 0.01% ~~mesenchymal precursor cells (MPCs)~~ capable of forming a clonogenic colony.

176. (Currently amended) The method of claim 172 wherein the population of cells ~~that express the marker STRO-1~~ comprise comprises at least 1% MPCs capable of forming a clonogenic colony.

177. (Currently amended) The method of claim 172 wherein the population of cells ~~that express the marker STRO-1~~ comprise comprises at least 0.01% STRO-1^{bright} MPCs.

178. (Currently amended) The method of claim 172 wherein the population of cells ~~that express the marker STRO-1~~ comprise comprises at least 0.1% STRO-1^{bright} MPCs.

179. (Currently amended) The method of claim 172 wherein the population of cells ~~that express the marker STRO-1~~ comprise ~~comprises~~ at least 1% STRO-1^{bright} MPCs.
180. (Currently amended) The method of claim 172 wherein the ~~cells~~ MPCs that express the marker STRO-1 are positive for any one or more of the markers 3G5, MUC18/CD146, and alpha-smooth muscle actin.
181. (Currently amended) The method of claim 172 wherein the ~~cells~~ MPCs that express the marker STRO-1 additionally co-express the marker VCAM-1.
182. (Cancelled)
183. (Currently amended) The method of claim 172 wherein the ~~cells~~ MPCs that express the marker STRO-1 are negative for hematopoietic lineage markers, including, but not limited to, CD34, CD45, and glycophorin-A.
184. (Currently amended) The method of claim 172 wherein the population of ~~cultured or expanded~~ cells is derived from a second tissue selected from ~~of~~ the group consisting of skin, liver, kidney, heart, adipose tissue, teeth, dental pulp, retina, brain, hair follicles, intestine, lung, spleen, lymph node, thymus, pancreas, bone, ligament, bone marrow, tendon, and skeletal muscle.
185. (Currently amended) The method of claim 172 wherein the population of ~~cultured or expanded cells~~ is ~~is cultured or expanded from~~ cells is isolated from a perivascular niche within a vascularised tissue source.

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186. (Currently amended) The method of claim 172 wherein the population of ~~cultured or expanded~~ cells is ~~cultured or expanded from cells~~ isolated from a perivascular niche within a non-haemopoietic vascularised tissue.
187. (Cancelled)
188. (Cancelled)
189. (Cancelled)
190. (Cancelled)
191. (Currently amended) The method of claim ~~187~~172 wherein the population of ~~cultured or expanded~~ cells comprises at least 10% STRO-1^{bright} MPCs.
192. (Currently amended) The method claim 172 wherein the ~~cells~~ MPCs that express the marker STRO-1 co-express any one or more of the markers selected from the group consisting of THY-1, VCAM-1, ICAM-1, PECAM-1, CD49a/CD49b/CD29, CD49c/CD29, CD49d/CD29, CD29, CD61, integrin beta5, 6-19, thrombomodulin, CD10, CD13, SCF, PDGF-R, EGF-R, IGF-1R, NGF-R, FGF-R, Leptin-R and STRO-2.
193. (Currently amended) A method of inducing neovascularisation in a target tissue of a patient, the method comprising the step of administering to the target tissue an effective amount of a population of mesenchymal precursor cells (MPCs) ~~derived from bone marrow~~ enriched for cells that express the marker STRO-1.
194. (Previously presented) The method according to claim 192, wherein the target tissue is cardiac tissue.